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Patent

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Gino Pavlovic, et al.  
Serial No: 10/071,074  
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For: ELECTROSTATIC CAPSULE  
Examiner: Phylesha L. Dabney  
Art Unit: 2643

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BRIEF ON APPEAL

S I R:

Applicant hereby requests a one-month extension of the original shortened statutory period for filing an Appeal Brief from the Notice of Appeal filed May 5, 2006. Enclosed is a credit card payment form in the amount of \$120 in payment of the government fee for a one-month extension of time.

This appeal is taken from the Final Action mailed February 3, 2006.

**Real Party in Interest**

The real party in interest in the above-identified application is:

AKG Acoustics GmbH  
Lemböckgasse 21-25  
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Austria

**Related Appeals and Interferences**

There are no related appeals or interferences of which Applicants are aware regarding the above-identified application.

**Status of Claims**

Claim 1 has been canceled. Claims 2-12 are pending in the application. Claims 7 and 8 would be allowable if rewritten in independent form. Claims 2-6 and 9-12 are subject to the present appeal. Claims 2-6 and 9-12 stand rejected under 35 U.S.C. 103(a) over U.S. Patent No. 4,360,955 to Block in view of U.S. Patent No. 3,418,435 to Norris.

**Status of Amendments After Final Rejection**

An amendment after final was not filed.

**Summary of the Claimed Subject Matter**

The claimed invention will now be summarized with reference to the drawings being made by way of reference numerals.

The claimed invention recites an electroacoustic microphone, comprising an electrode 2 and a diaphragm 1 connected to a microphone amplifier 24 via electrical contacting. The electrostatic microphone comprises at least one electrostrictive

element electrically connected to a second electrical circuit. The second electrical circuit is independent from the electrical contacting of the electrode and diaphragm. A controllable power supply 24 is provided for applying a predetermined voltage to the electrostrictive element 12 such that the electrostrictive element changes its dimension and in turn changes the geometry and the acoustic properties of the electrostatic microphone (See page 18, line 8 to page 19, line 5, page 21, line 15 to page 22, line 4, and Fig. 5).

**Grounds of Rejection to be Reviewed on Appeal**

The following grounds are presented for review:

Whether claims 2-6 and 9-12 are unpatentable under 35 U.S.C. 103(a) over Block in view of Norris.

**Argument**

**The Rejection of Claims 2-6 and 9-12 under 35 U.S.C. 103(a):**

In rejecting claims 2-6 and 9-12, the Examiner stated the following in the final rejection:

"Regarding independent claims 3, 9-12, Block teaches an electro acoustic microphone comprising an electrode (13) and a diaphragm (23) connected to a microphone amplifier (21) via electrical contacting, the electrostatic microphone comprising: at least one electrostrictive element (23) electrically connected to a second circuit (fig. 3; 37-38, 41; since the needle 37 interacts with disc 41 to collect data and transfer data to the microphone via conductive solder pad 42), the second circuit being independent from the electrical contacting of the electrode and diaphragm, and further comprising: a controllable power supply (34) for applying a predetermined voltage to the electrostrictive element such that the electrostrictive element changes its dimension and in turn changes the geometry and the acoustic properties of the electrostatic microphone.

Block fails to teach the specifics of the second circuit (phonograph of Block) as being mechanical or electrical.

Norris teaches an electrical phonograph circuit (col. 9 line 74 through col. 10 line 1) wherein an electrical cord (112) supplies power for rotating the record (115) and the needle utilized series connect L-C circuits to receive the data (col. 2 lines 43-53). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to an electrical circuit in the invention of Block in view of Norris for driving a motor to turn the phonographical disc that the needle 37 reads.

Regarding claim 2, the combination of Block and Norris teaches the electrostrictive elements are piezoelectric elements.

Regarding claim 4, the combination of Block and Norris teaches operating electrostatically and comprising an electrode and a diaphragm with an annular spacer securing the diaphragm and the electrode at a spacing from one another, wherein the annular spacer is the electrostrictive element (figs. 1-10).

Regarding claim 5, the combination of Block and Norris teaches operating electrostatically and functioning as a microphone, further comprising a control loop configured to determine a voltage supplied to the electrostrictive element to compensate manufacturing tolerances and temperature effects having a negative effect on the spacing between the electrode and the diaphragm, wherein the electro acoustic transducer or electro acoustic capsule has a capacitance providing a parameter for the control loop for determining the voltage supplied to the electrostrictive element (col. 3 line 64 through col. 4 line 19).

Regarding claim 6, the combination of Block and NORRIS teaches operating electrostatically and functioning as a microphone, comprising a sound receiver (37) arranged between a main source of sound (41) and the microphone (11) and determining a sound level, wherein values of the sound level measured by the sound receiver are employed for controlling a voltage supplied to the electrostrictive element."

Applicants respectfully disagree with the position taken by the Examiner that pick-up needle 37 shown in Fig. 3 of the reference to Block constitutes a connection of an electrostrictive element with a second electrical circuit. Applicants respectfully submit that:

1. Contacting of a needle with a rotating vinyl disk does not constitute a connection, not even in the mechanical sense and certainly not in the electrical sense.
2. The reference to Block nowhere discloses that the vinyl disk is rotated electrically. It would entirely possible to rotate the vinyl disk by means of a mechanical device; however, neither method

is disclosed in the reference. Column 2, lines 23 to 27, disclose that the "phonographic pick-up needle ... mechanically coupled to the diaphragm electrode of the capacitive transducer"; accordingly, the present invention is distinguished over the reference as a result of the word "electrically" and describing the connection between the electrostrictive element and the second electrical circuit.

In addition, it is respectfully pointed out that the pick-up needle 37 only acts on the diaphragm 23 and not on a piezoelectric or magnetostrictive component, so that an analogy between the reference and the present invention does also not exist in this respect.

Moreover, the attention of the Examiner is respectfully directed to column 4, lines 54 to 64, wherein it is clearly stated that the pick-up needle 37, which includes a diamond stylus 38, rides in the groove 39 of the recording disk 41 and picks up mechanical vibrations induced in the middle 37 which are transmitted to the diaphragm 23 via a mechanical linking or coupling member which is fixedly secured to the central region of the diaphragm 23.

Finally, it is also to be mentioned that the device disclosed in Fig. 3 of the reference to Block clearly does not include a "power

supply" for imparting a predetermined voltage to an electrostrictive element; rather, the needle of the reference to Block deforms the membrane 23 and the information is measured as a change of the capacity without changing the acoustic properties of the transducer.

Accordingly, the Examiner is incorrect in considering the device shown in Fig. 3 of the reference to Block to be a second electrical circuit and furthermore, the reference does not provide for an electrostrictive element.

The Examiner has made a comparison between the reference to Block and the invention and has correctly identified reference numeral 23 of the reference as that of a diaphragm, however, the Examiner subsequently refers to item 23 as an "electrostrictive element". The Examiner further states the electrostrictive element, i.e., the diaphragm, is connected to a second electrical circuit, (referring to Fig. 3; reference numbers 37-38, 41), wherein this second electrical circuit is supposed to be independent of the circuit which contacts the electrode and the diaphragm, and is supposed to have a controllable power supply.

However, it is respectfully submitted that the following is correct:



The component 23 of the reference is actually the diaphragm of a capacitatively acting microphone or sound receiver for records of vinyl. The latter use is illustrated in Fig. 3 and the components 37-38, 41 do not constitute an electrical circuit, as suggested by the Examiner, but rather are a sectional view through a record 41 with a diamond needle 38 which slides in the groove 39 of the record 41 and conducts mechanical vibrations onto the diaphragm through a mechanical connection 42 which is fixedly attached to the center region of the diaphragm 23.

These vibrations result in changes of the capacity of the capacitor which is formed by diaphragm 23 and the electrode 13. and, thus, to changes of the electrical output signal.

Accordingly, the elements 37, 38 and 41 of the reference do not constitute a second electrical circuit as it is recited in claim 12 of the present application.

Moreover, the question remains as to how the vinyl record can provide a second circuit or how the connection to such a second circuit should take place. Furthermore, what is the case

when no record is being played? Then there is no mechanical or electrical connection.

The Examiner also errs by mixing Fig. 1 of Block, which shows a microphone, with Fig. 3, which shows the use of the principle of Block in connection with the pick-up of a record player. A further incorrect interpretation is the consideration of the direct current power supply 34, which only serves for polarization between the electrode 13 and the diaphragm 23, as controllable. Such direct current power supplies are, in contrast, set to a constant voltage since variation of the voltage would change the oscillation characteristics of the membrane so that it would be unusable as a microphone.

The patent to Norris discloses a radial phonograph arm and a flexibly positioned pickup assembly. In Norris the data is not received by the needle/stylus via an L-C circuit. Instead, the data is transferred to the needle by oscillations resulting from running along the grooves in the record, and due to these oscillations of the needle the data are changed by the connected oscillatory circuit that an electrical current flowing through the circuit is changed sufficiently so that after amplification a loud speaker can be driven.

The Examiner is correct that the turntable of the references can be driven by an electrical motor, this, however, is not what the present invention does.

A combination of these two references does not teach or suggest the features recited in the claims of the present application.

Thus, it is respectfully submitted that the combination of Block and Norris does not teach the invention as recited in claims 2-6 and 9-12.

### **Conclusion**


Accordingly, in view of the above considerations, it is Applicant's position that the Examiner's rejection of claims 2-6 and 9-12 under 35 U.S.C. 103(a) is in error and should be reversed.

The amount of \$500.00 to cover the fee for filing an appeal brief is being charged as per attached form PTO-2038. Any additional fees or charges required at this time in connection with this application should be charged to Patent and Trademark Office Deposit Account No. 11-1835.

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Respectfully submitted,

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Dated: August 7, 2006

**CERTIFICATE OF MAILING**

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, PO Box 1450 Alexandria, VA 22313-1450, on August 7, 2006.

By:

  
Klaus P. Stoffel

Date: August 7, 2006

Claims Appendix

2. The electroacoustic microphone according to claim 12, wherein the electrostrictive elements are piezoelectric elements.

3. The electroacoustic microphone according to claim 12, operating electrostatically and comprising a diaphragm and an electrode, wherein the electrode is the electrostrictive element.

4. The electroacoustic microphone according to claim 12, operating electrostatically and comprising an electrode and a diaphragm with an annular spacer securing the diaphragm and the electrode at a spacing from one another, wherein the annular spacer is the electrostrictive element.

5. The electroacoustic microphone according to claim 12, operating electrostatically and functioning as a microphone, further comprising a control loop configured to determine a voltage supplied to the electrostrictive element to compensate manufacturing tolerances and temperature effects having a negative effect on the spacing between the electrode and the diaphragm, wherein the electroacoustic transducer or

electroacoustic capsule has a capacitance providing a parameter for the control loop for determining the voltage supplied to the electrostrictive element.

6. The electroacoustic microphone or electroacoustic capsule according to claim 12, operating electrostatically and functioning as a microphone, comprising a sound receiver arranged between a main source of sound and the microphone and determining a sound level, wherein values of the sound level measured by the sound receiver are employed for controlling a voltage supplied to the electrostrictive element.

7. The electroacoustic microphone or electroacoustic capsule according to claim 12, having at least one sound inlet comprising an electroacoustic friction pill arranged in the area of the sound inlet, wherein the friction pill is comprised of two plates of electrostrictive material having edges, wherein on the edges of the plates small openings are provided, wherein the plates are metal-coated on their top and bottom sides and have an electrical contact, wherein the plates are electrically connected in series.

8. The electroacoustic microphone according to claim 7,

wherein the electrostrictive elements are piezoelectric elements.

9. The electroacoustic microphone according to claim 12, comprising a sound passage, wherein the electrostrictive elements release or cover the sound passage as a function of the dimensional changes of the electrostrictive elements.

10. The electroacoustic microphone or electroacoustic capsule according to claim 12, comprising a first hollow space and a second hollow space, wherein the electrostrictive elements connect or separate the first and second hollow spaces as a function of the dimensional changes of the electrostrictive elements.

11. The electroacoustic microphone according to claim 12, comprising a component with a channel, wherein the electrostrictive elements release or cover the channel of the component as a function of the dimensional changes of the electrostrictive elements.

12. An electroacoustic microphone, comprising an electrode

and a diaphragm connected to a microphone amplifier via electrical contacting, said electrostatic microphone comprising at least one electrostrictive element electrically connected to a second electrical circuit, said second electrical circuit being independent from the electrical contacting of the electrode and diaphragm, and further comprising a controllable power supply for applying a predetermined voltage to the electrostrictive element such that the electrostrictive element changes its dimension and in turn changes the geometry and the acoustic properties of the electrostatic microphone.



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**Evidence Appendix**

**N.A.**

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Related Proceedings Appendix

There are no related proceedings.